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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,418	06/24/2005	Riki Okamoto	52433/803	9229
26646 7590 06/02/2009 KENYON & KENYON LLP ONE BROADWAY NEW YORK, NY 10004				
EXAMINER YEE, DEBORAH				
ART UNIT 1793		PAPER NUMBER		
MAIL DATE 06/02/2009		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/540,418

**Applicant(s)**

OKAMOTO ET AL.

**Examiner**

Deborah Yee

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 April 2009.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-3 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 24 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/CDC)  
4) ☐ Interview Summary (PTO-413)  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_  
Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 to 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,290,784 ("Yasuhara").
3. Yasuhara in claims 1 to 10 of columns 16-18 discloses hot rolled steel sheet having a composition with constituents whose wt% ranges overlap those recited by the claims; and such overlap in alloy wt% ranges establishes a prima facie case of obviousness because it would be obvious for one skilled in the art to select the claimed alloy wt% ranges over the broader disclosure of the prior art since the prior art teaches the same utility of using steel to make press work automotive components, and similar properties of high strength and high ductility, and similar microstructure comprising a main phase of ferrite with an average grain size of not less than 2  $\mu\text{m}$  but less than 4  $\mu\text{m}$  and second phase that can be bainite.
4. Claims 1 to 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over European patent 0974677 ("EP-677") for the reasons set forth in the previous office action dated April 7, 2008 and October 31, 2008.

***Response to Arguments***

5. Applicant's arguments and 1.132 Declaration filed April 30, 2009 have been fully considered but they are not persuasive over EP-0974677.

***EP 0974677 ("EP-677")***

6. It was argued that steel of EP-677 optionally contains Ti of less than 0.3% for promoting a growth of ferrite grains whereas present invention steel contains Ti as indispensable in a range of 0.003 to 0.20% to cause the precipitation of fine Ti and enable high strength. Moreover, none of the specific prior art examples meet the claimed composition, in particularly the C, Si and/or Ti .

7. In response to argument, despite the fact that EP-677 does not exemplify an specific steel example with C, Si and/or Ti falling within the claimed limitations, EP-677 still teaches the general steel composition comprising C, Si and Ti and other elements that overlap those recited by the claims; and such overlap in alloy wt% ranges establishes a prima facie case of obviousness.

8. In regard to Ti content, it is the Examiner's position regardless of whether Ti is optional or mandatory, EP-677 patent still teaches it would be obvious to add Ti up to less than 0.3% which encompasses and therefore teaches Applicant's Ti range of 0.003-0.02%. Also EP-677 patent in paragraph [0030] incorporates Ti for the same reason as present invention which is to promote higher strength by forming Ti carbides, nitrides or carbonitrides.

9. Applicant argued that claims patentably define over EP-677 in view of test data relationships shown in figures 1, 2 and 3 in 1.132 Declaration. Figure 1 shows the

relationship between tensile strength and hole expandability such that hole expandability ratio according to the present invention exhibits two times more than that of EP-677 examples. Figure 2 shows the relationship between the carbon content in the steel and the volume fraction of retained austenite, wherein as C content increases the volume fraction of retained austenite. Therefore according to present invention, it is necessary to limit the C content to less than 0.08% in order to restrain the increase of the retained austenite volume fraction. Figure 3 shows the relationship between retained austenite volume fraction and hole expandability ratio, wherein higher retained austenite volume ratio deteriorates hole expandability ratio.

10. In response argument, EP-677 teaches steel containing 0.03 to 0.3% C which overlaps and teaches a portion of Applicant's C range of 0.02 to 0.08% necessary to restrain the increase of retained austenite volume fraction. Moreover, figures 1 to 3 would not patentably distinguish over EP-677 since the low austenite volume fraction and high hole expandability ratio property limitations are not recited by Applicant's claims and therefore would not be a patentable consideration. Note Applicant's claims merely recite tensile strength of at least  $590 \text{ N/mm}^2$  which is met by the steel of EP-677 and further recites a microstructure "consisting essentially of substantially two-phase structure of ferrite... and bainite. The term "substantially" indicates 50 % or more ferrite and bainite, and retained austenite would not be excluded. Perhaps to distinguish claims over prior art, it is recommended to use claim language such as –steel sheet consisting of a two-phase structure— or –steel sheet consisting essentially of ferrite and

bainite and up to 2 vol.% retained austenite--- since EP-677 teaches 3 to 50 % retained austenite.

***JP 11-323480 ("JP-480")***

11. Applicant's arguments and 1.132 Declaration are persuasive over JP-480. The prior art is directed to a cold rolled steel which teaches away from adding Ti to obtain high strength in paragraph [0026] whereas present invention claims are directed to a hot rolled steel wherein 0.003-0.20% Ti is an indispensable element to cause the precipitation of fine TiC to enable higher strength.

***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/  
Primary Examiner  
Art Unit 1793

/DY/